

Applicant: Gary B. Gordon et al.

Serial No.: 09/812,252

Filed: March 19, 2001

Docket No.: 10010189-1

Title: IMPEDANCE SENSING SCREEN POINTING DEVICE

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**REMARKS**

This Amendment is responsive to the Final Office Action mailed December 3, 2003. In that Office Action, the Examiner rejected claims 1-31 under 35 U.S.C. §103(a) as being unpatentable over Ferrari et al., U.S. Patent No. 6,392,636 (“Ferrari”) in view of Kuroda, U.S. Patent No. 5,376,947 (“Kuroda”).

With this Response, claims 1, 11, 12, and 27 have been amended, and new claims 32-35 have been added. Claims 1-35 remain pending in the application and are presented for reconsideration and allowance.

**Claim Rejections under 35 U.S.C. §103**

The Examiner rejected claims 1-31 under 35 U.S.C. §103(a) as being unpatentable over Ferrari et al., U.S. Patent No. 6,392,636 (“Ferrari”) in view of Kuroda, U.S. Patent No. 5,376,947 (“Kuroda”). With this Amendment, Applicant has amended independent claim 1 as follows to more clearly define the claimed invention:

the controller configured to generate pixel values representing the portion of the tip of the digit placed against the sensing elements based on the sensed electrical property at each of the sensing elements, the controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements.

With respect to independent claim 1, the Examiner acknowledged that “Ferrari does not disclose a controller configured to generate movement data based on a comparison of successively generated sets of values.” (Office Action at para. no. 2, page 3). Kuroda does not teach or suggest comparing a first one of the sets with at least one pixel shifted version of a second one of the sets as recited in claim 1, as amended.

There is also no teaching or suggestion in the cited prior art to combine Ferrari and Kuroda in the manner proposed by the Examiner. The Examiner stated that “it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ferrari’s input system to include Kuroda’s comparing/calculating circuit (50).” (Office Action at para. no. 2, page 3). However, Ferrari discloses that movement information

**Amendment and Response under 37 C.F.R. 1.116**

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is generated based on the current **position** of a finger. The position of the finger is determined by calculating the centroid of a sensed “blob” in an image representing the finger. If the position of the finger is near the top of the array 3, the cursor is moved up. If the position of the finger is near the bottom of the array 3, the cursor is moved down. (See, e.g., Ferrari at Abstract; col. 1, lines 53-56; col. 4, lines 10-15; col. 4, lines 33-37; col. 5, lines 10-63; col. 8, lines 38-44; col. 9, lines 19-61; col. 10, lines 38-50; col. 11, lines 10-40). Ferrari includes no teaching or suggestion that movement information could or should be generated in any other manner, such as by a technique like that disclosed in Kuroda, or by any other technique. Similarly, Kuroda includes no teaching or suggestion that the comparing/calculating circuit 50 disclosed therein could or should be used to replace a system that determines the position of a finger by calculating the centroid of a sensed “blob” as disclosed in Ferrari. In fact, the combination suggested by the Examiner would render meaningless large portions of the disclosure of Ferrari, including those portions directed to determining the position of a finger, and moving the cursor based on the sensed position. (See, e.g., Ferrari at Figures 5A-5I, 6, 7, 8, and 9, and corresponding description).

In view of the above, Ferrari and Kuroda, either alone, or in combination, do not teach or suggest each and every limitation of independent claim 1, as amended. The Applicant respectfully requests entry of the amendment to claim 1, removal of the rejection of claim 1 under 35 U.S.C. § 103(a), and requests allowance of this claim. Since dependent claims 2-18 further limit patentably distinct claim 1, claims 2-18 are believed to be allowable over the cited references, and allowance of claims 2-18 is respectfully requested.

Independent claim 19 includes the limitation “correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage”. As mentioned above, the Examiner acknowledged that “Ferrari does not disclose a controller configured to generate movement data based on a comparison of successively generated sets of values.” (Office Action at para. no. 2, page 3). Ferrari also does not teach or suggest correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage as recited in independent claim 19. Rather, as described

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above with reference to claim 1, Ferrari discloses that movement information is generated based solely on the current position of a finger.

The Examiner stated that:

Regarding claim 19, in addition to what has been discussed above, Kuroda discloses a data adjusting circuit (52) to which previous movement data delta .x1, and delta .y1 are outputted (step S65) and also alternatively movement data delta.x2, delta.y2 are outputted (S67) so that adjustment of movement data takes place based on area data. See Fig. 3 and Col. 5, lines 17-24. It would have been obvious that the data adjusting circuit (52) is equivalent to the desired correlation of versions of images. (Office Action at para. no. 2, page 3).

The Examiner appears to acknowledge that Kuroda does not explicitly teach or suggest correlating versions of images as recited in claim 19, as the Examiner stated that Kuroda's data adjusting circuit (52) is "equivalent to" the desired correlation of versions of images. It is not clear whether the Examiner is relying on Official Notice, or the concept of inherency, or something else. However, as indicated in the Manual of Patent Examining Procedure, "[o]fficial notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known." MPEP § 2144.03(A). "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well known." *Id.* (emphasis in original). Applicant contends that the limitations in claim 19 that the Examiner appeared to indicate were not explicitly taught or suggested by Kuroda are not well known facts that are capable of instant and unquestionable demonstration as being well known.

It is also not inherent in Kuroda that the data adjusting circuit 52, or any other circuit, correlates versions of images as recited in claim 19. As the Federal Circuit has stated, "[i]nherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., v. Top-U.S.A. Corp.*, 63 USPQ2d 1597, 1599 (Fed. Cir. 2002) (quoting *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)). It is not inherent in Kuroda that the data adjusting circuit 52 correlates versions of images. Rather, the data adjusting circuit 52 simply scales a received

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set of movement data by a factor,  $\alpha$ . (See, e.g., Kuroda at col. 5, lines 25-40). It is not necessary to correlate versions of images to scale a set of movement data.

Thus, neither Kuroda nor Ferrari teach or suggest “correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage” as recited in independent claim 19.

In view of the above, Ferrari and Kuroda, either alone, or in combination, do not teach or suggest each and every limitation of independent claim 19. The Applicant respectfully requests removal of the rejection of claim 19 under 35 U.S.C. § 103(a), and requests allowance of this claim. Since dependent claims 20-31 further limit patentably distinct claim 19, claims 20-31 are believed to be allowable over the cited references, and allowance of claims 20-31 is respectfully requested.

In addition, several of the dependent claims 2-18 and 20-31 include limitations that are not taught or suggested by the cited prior art, and are further distinguishable from the cited prior art. For example, claim 12 includes the limitation “wherein the controller further comprises an alternating current signal source coupled to the conductive [layer] rim for driving the conductive [layer] rim with an alternating current signal.” Claim 13 includes the limitation “wherein the controller further comprises an automatic gain controller coupled to the alternating current signal source for controlling the magnitude of the alternating current signal.” The Examiner stated that “[r]egarding claims 12-13, Ferrari teaches the use of a reference voltage, V<sub>r</sub> at ground potential (100) along with horizontal surface (125) and a dielectric layer (25). See col. 7, lines 19-29.” (Office Action at para. no. 2, page 4). However, Ferrari explicitly states that reference voltage, V<sub>r</sub>, is a DC voltage, rather than an AC voltage: “In particular, DC voltage source 12 provides a DC reference voltage V<sub>r</sub> that is referenced to ground potential at 100.” (Ferrari at col. 7, lines 23-25). Neither Ferrari nor Kuroda teach or suggest an alternating current signal source coupled to a conductive rim for driving the conductive rim with an alternating current signal as recited in dependent claim 12. The cited references also do not teach or suggest an automatic gain controller coupled to an alternating current signal source for controlling the magnitude of the alternating current signal as recited in claim 13.

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With this Amendment, Claim 11 has been amended as follows: "further comprising a conductive rim [layer] formed around a perimeter of the plurality of sensing elements. And claim 27 has been amended as follows: "wherein a conductive rim [layer] is formed around a perimeter of the plurality of sensing elements." Claim 27 also includes the limitation "driving the conductive [layer] rim with an alternating current signal," which, as described above with reference to claim 12, is not taught or suggested by the cited prior art. Neither Ferrari nor Kuroda teach or suggest a conductive rim formed around a perimeter of a plurality of sensing elements as recited in claims 11 and 27, as amended. The Applicant respectfully requests entry of the amendment to claims 11 and 27, removal of the rejection of claims 11 and 27 under 35 U.S.C. § 103(a), and requests allowance of these claims.

**Newly Submitted Claims**

With this Amendment, Applicant has submitted new claims 32-35. Claims 32 and 33 are dependent on independent claim 1, and claims 34 and 35 are dependent on independent claim 19. As described above, Ferrari and Kuroda, either alone or in combination, do not teach or suggest each and every limitation of claim 1, or of claim 19. Since dependent claims 32-35 further limit patentably distinct claim 1 or claim 19, claims 32-35 are believed to be allowable over the cited references, and allowance of claims 32-35 is respectfully requested. In addition, dependent claims 32-35 include limitations that are not taught or suggested by the cited prior art, and are further distinguishable from the cited prior art. The Applicant respectfully requests entry of the amendment adding claims 32-35, and requests allowance of these claims.

**Allowable Subject Matter**

In light of the above, Applicant believes independent claims 1 and 19 and the claims depending therefrom, are in condition for allowance. Allowance of these claims is respectfully requested.

**CONCLUSION**

Any inquiry regarding this Amendment and Response should be directed to Jeff A. Holmen at the below-listed telephone number or Pamela Lau Kee at Telephone No. (408)

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553-3059, Facsimile No. (408) 553-3063. In addition, all correspondence should continue to be directed to the following address:

**Agilent Technologies, Inc.**  
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Respectfully submitted,

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**CERTIFICATE UNDER 37 C.F.R. 1.8:**

The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 3rd day of February, 2004.

By *Jeff A. Holmen*  
Name: Jeff A. Holmen